



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,266	02/17/2004	Erwin Dieterich	PO7986/LeA 36,518	2227

157 7590 04/21/2005

BAYER MATERIAL SCIENCE LLC
100 BAYER ROAD
PITTSBURGH, PA 15205

EXAMINER

PARSA, JAFAR F

ART UNIT	PAPER NUMBER
----------	--------------

1621

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/780,266

Applicant(s)

DIETERICH ET AL.

Examiner

Jafar Parsa

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/7/2005.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

The abstract is objected to because the abstract should be in narrative form and generally limited to a **single paragraph** on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klingler et al (USPN 5,679,873).

Applicants' claimed invention is directed to a process for the production of dinitrotoluene by the two-stage of toluene. This process consists of

a) a first stage wherein toluene is reacted adiabatically with nitrating acid such

that at least 90% of the toluene is reacted off and no more than 70% of the toluene used reacts to form dinitrotoluene, the organic phase containing mononitrotoluene and the aqueous acid phase containing sulfuric acid are then separated, the aqueous acid phase containing sulfuric acid is concentrated by flash evaporation, and the resulting concentrated sulfuric acid is recycled into the reaction in the first stage and/or into the reaction in the second stage and/or into the concentration in the second stage, and b) a second stage wherein the organic phase containing mononitrotoluene from the first stage is completely reacted isothermally with nitrating acid, the organic phase and the aqueous acid phase containing sulfuric acid are then separated, and the aqueous acid phase containing sulfuric acid is concentrated by vacuum evaporation, and the resulting concentrated sulfuric acid is recycled into the reaction in the first stage and/or the second stage.

Klingler teaches a two-stage process from toluene and nitric acid in the presence of sulfuric acid under adiabatic conditions in the presence of nitrating acids made up of specified components. The reaction product of the first phase is separated into an acid phase and an organic phase containing the mononitrotoluene. Some water is removed from the acid phase, nitric acid is added and the resultant mixture is recycled. The organic phase containing mononitrotoluene is further nitrated to produce the dinitrotoluene. This nitration mixture is also separated into an acid phase and an organic phase. The acid phase is treated to remove some water, nitric acid is added and the resultant acid mixture is recycled. Dinitrotoluene is recovered from the organic phase (see abstract and Examples 1-2). Klingler teaches that the aqueous acid phase is

Art Unit: 1621

concentrated by distillation through flash evaporation. Mononitrotoluene from the first stage of the process is added to the vapors present during the concentration of the second waste acid (see col. 3, lines 31-35 and col. 4, lines 3-5).

The Klingler reference is silent about the percentage of toluene, which is reacted to form mononitrotoluene and dinitrotoluene. However, Klingler teaches that two nitrating acids of different concentration are used. In the first stage, a nitrating acid with of low concentration is used for selective nitration. In the second stage a concentrated nitrating acid is used in view of greater nitrating demand (see col. 4, lines 14-20). It would therefore have been obvious to the skilled artisan at the time the invention was made to use an optimum concentration of nitrating acid in each stage, so that selective nitration and energy-optimized concentration of the waste acid are utilized.

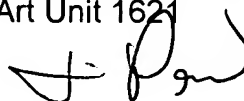
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jafar Parsa whose telephone number is (571)272-0643. The examiner can normally be reached on 8 a.m.-4:30 p.m. (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571)272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JP
April 18, 2005

Jafar Parsa
Primary Examiner
Art Unit 1621



**J. PARSA
PRIMARY EXAMINER**